

**Abstract:**

Bupa is an autonomous and decentralized money market that enables variable based rates for supplying digital asset collaterals to the protocol and from borrowing digital assets from the protocol with over-collateralized assets. The tokenization of digital assets onto the Bupa protocol will unlock liquidity from that asset without having to liquidate and/or sell that asset in the market. Money Markets allow users to tap into a peer-to-peer marketplace where all interactions are validated against open-source smart contracts running on the immutable BEP-20 blockchain. The entire Bupa protocol is operated by its community with no centralized control or team tokens exercising power over the protocol's governance. Bupa is designed to protect the equilibrium between borrowers and suppliers by allowing liquidators to handle bad vaults and collecting a premium for stabilizing the protocol. Bupa users are in control by interacting with the BUPA utility token to govern and operate the platform with consensus.

**Disclaimers**

Bupa is an open-source project built on the BEP-20 platform. Bupa Tokens ("BUPA") have been sold and on PRE-SALE/initial token sale has been conducted for community members of royal families.

BUPA are only available for mining and the existing supply was distributed during the launch of protocol for immediate utilization.

Bupa tokens are not securities, investment contracts, or any security-based instrument and are exclusively designed as utility tokens for consumptive use on the Bupa protocol. BUPA is not intended to constitute securities or financial instruments in any jurisdiction. This whitepaper does not constitute a prospectus or offer document of any sort and is not intended to constitute an offer of securities or a solicitation for investment in securities in any jurisdiction. There should be no expectation of profit from BUPA tokens as there is no common enterprise or company that you are affiliated or contributing too. This Whitepaper does not constitute or form part of any opinion on any advice to sell, or any solicitation to purchase any BUPA nor shall it or any part of it nor the fact of its presentation form the basis of, or be relied upon in connection with, any contract or decision. The Bupa protocol is a high-risk platform where all assets are at risk of total loss. Please exercise caution when using the protocol. The protocol is not controlled by any company, group, or individual, but rather it was created for free and maintained by the community and open-source royal family members. The Bupa protocol is a peer-to-peer network operated by a series

of smart contracts that are open-source. Any purchase of BUPA will be for consumptive purposes only and for within the protocol such as stackin, minting, and for mining. .

**Introduction & Value Proposition**

Bupa is a decentralized money market not forked from the Compound protocol and not designed to focus scaling a larger availability of supported collateral and lower the threshold of entry for new collateral. The total maximum available tokens are 2100000000. Bupa presents itself with a max cap of

5000000 tokens and enabling approximately 3.5 million BUPA to be minted through liquidity mining (farming) incentives on the Bupa Protocol over a recommended period of 8 years. This will distribute BUPA per block to platform users. With these token eco-energy ("eco-power") the Bupa protocol will be sufficiently decentralized at launch

and the BUPA token will have immediate utility within its platform.

Protocol

Bupa is a decentralized money market that enables users to borrow and supply digital assets to the protocol within a non-custodial environment directly within the BEP-20 blockchain. This means that users, at all times, have control of their digital assets and are bound by the protocol's parameters directly on-chain. The protocol is autonomous and algorithmic with its parameters being not controlled by governance proposals and yield curves. Bupa users can access the platform via smart contracts, the Bupa API, or via a frontend application. The main functionality of Bupa is to enable users to supply collateral to either earn as a supplier or to use as collateral to borrow other digital assets from the protocol.

### **Bupa Mission:**

**ECO ENERGY**

**GREEN POWER**

**PLANTATION**

**GREEN POWER MINING**

**EMISSION FREE ENERGY PROTOCOL**

### **WHAT IS ECO-ENERGY?**

Ecological Energy

The term eco-Energy is being used to qualify specific sources of energy that promote and support the natural ecological dynamic system of the planet. This comprehensively occurs with the use of alternative energy sources that are clean, efficient and renewable.

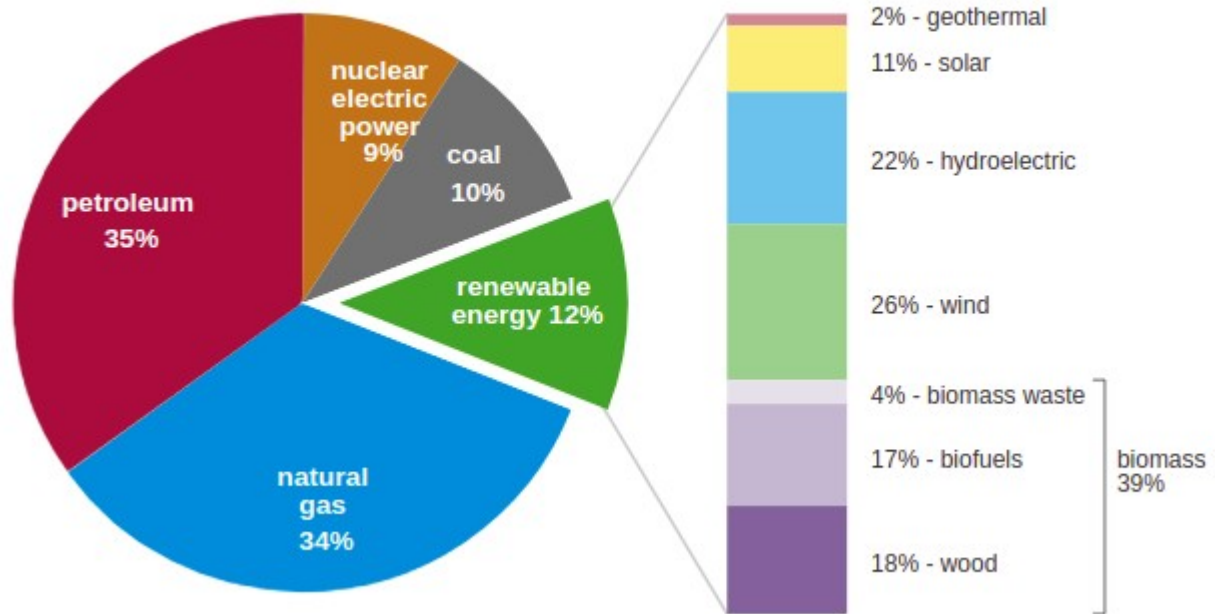
### **What are 8 types of renewable energy?**

The major types of renewable energy sources are:

- Biomass
  - Wood and wood waste
  - Municipal solid waste
  - Landfill gas and biogas
  - Ethanol
  - Biodiesel
- Hydropower
- Geothermal
- Wind
- Solar

total = 92.94 quadrillion  
British thermal units (Btu)

total = 11.59 quadrillion Btu



Renewable energy is energy from sources that are naturally replenishing but flow-limited; renewable resources are virtually inexhaustible in duration but limited in the amount of energy that is available per unit of time.

Biomass—renewable energy from plants and animals

Biomass is renewable organic material that comes from plants and animals. Biomass was the largest source of total annual U.S. energy consumption until the mid-1800s. Biomass continues to be an important fuel in many countries, especially for cooking and heating in developing countries. The use of biomass fuels for transportation and for electricity generation is increasing in many developed countries as a means of avoiding carbon dioxide emissions from fossil fuel use. In 2020, biomass provided nearly 5 quadrillion British thermal units (Btu) and about 5% of total primary energy use in the United States. Biomass contains stored chemical energy from the sun. Plants produce biomass through photosynthesis. Biomass can be burned directly for heat or converted to renewable liquid and gaseous fuels through various processes.

Biomass sources for energy include:

- Wood and wood processing wastes—firewood, wood pellets, and wood chips, lumber and furniture mill sawdust and waste, and black liquor from pulp and paper mills
- Agricultural crops and waste materials—corn, soybeans, sugar cane, switchgrass, woody plants, and algae, and crop and food processing residues

- Biogenic materials in municipal solid waste—paper, cotton, and wool products, and food, yard, and wood wastes
- Animal manure and human sewage

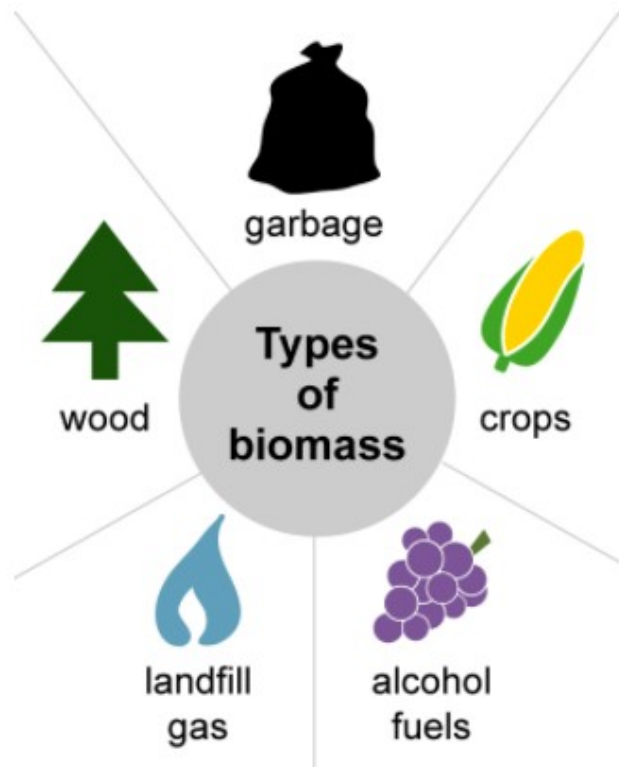
## Photosynthesis



In the process of photosynthesis, plants convert radiant energy from the sun into chemical energy in the form of glucose—or sugar.



Source: Adapted from The National Energy Education Project (public domain)



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## Converting biomass to energy

Biomass is converted to energy through various processes, including:

- Direct combustion (burning) to produce heat
- Thermochemical conversion to produce solid, gaseous, and liquid fuels
- Chemical conversion to produce liquid fuels
- Biological conversion to produce liquid and gaseous fuels

Direct combustion is the most common method for converting biomass to useful energy. All biomass can be burned directly for heating buildings and water, for industrial process heat, and for generating electricity in steam turbines.

Thermochemical conversion of biomass includes *pyrolysis* and *gasification*. Both are thermal decomposition processes in which biomass feedstock materials are heated in closed, pressurized vessels called *gassifiers* at high temperatures. They mainly differ in the process temperatures and amount of oxygen present during the conversion process.

- Pyrolysis entails heating organic materials to 800–900°F (400–500 °C) in the near complete absence of free oxygen. Biomass pyrolysis produces fuels such as charcoal, bio-oil, renewable diesel, methane, and hydrogen.
- Hydrotreating is used to process bio-oil (produced by *fast pyrolysis*) with hydrogen under elevated temperatures and pressures in the presence of a catalyst to produce renewable diesel, renewable gasoline, and renewable jet fuel.
- Gasification entails heating organic materials to 1,400–1700°F (800–900°C) with injections of controlled amounts of free oxygen and/or steam into the vessel to produce a carbon monoxide and hydrogen rich gas called synthesis gas or *syngas*. Syngas can be used as a fuel for diesel engines, for heating, and for generating electricity in gas turbines. It can also be treated to separate the hydrogen from the gas, and the hydrogen can be burned or used in fuel cells. The syngas can be further processed to produce liquid fuels using the Fischer–Tropsch process.

A chemical conversion process known as *transesterification* is used for converting vegetable oils, animal fats, and greases into fatty acid methyl esters (FAME), which are used to produce biodiesel.

Biological conversion includes fermentation to convert biomass into ethanol and anaerobic digestion to produce renewable natural gas. Ethanol is used as a vehicle fuel. Renewable natural gas—also called *biogas* or *biomethane*—is produced in anaerobic digesters at sewage treatment plants and at dairy and livestock operations. It also forms in and may be captured from solid waste landfills. Properly treated renewable natural gas has the same uses as fossil fuel natural gas.

Researchers are working on ways to improve these methods and to develop other ways to convert and use more biomass for energy.

## How much biomass is used for energy?

In 2020, biomass provided about 4,532 trillion British thermal units (TBtu), or about 4.5 quadrillion Btu and equal to about 4.9% of total U.S. primary energy consumption. Of that amount, about 2,101 TBtu were from wood and wood-derived biomass, 2,000 TBtu were from biofuels (mainly ethanol), and 430 TBtu were from the biomass in municipal wastes. The amounts—in TBtu—and percentage shares of total U.S. biomass energy use by consuming sector in 2020 were:

- industrial—2,246 TBtu—50%

- transportation—1,263 TBtu—28%
- residential—458 TBtu—10%
- electric power—424 TBtu—9%
- commercial—141 TBtu—3%

The industrial and transportation sectors account for the largest amounts, in terms of energy content, and largest percentage shares of total annual U.S. biomass consumption.

The wood products and paper industries use biomass in combined heat and power plants for process heat and to generate electricity for their own use. Liquid biofuels (ethanol and biomass-based diesel) account for most of the transportation sector's biomass consumption.

The residential and commercial sectors use firewood and wood pellets for heating. The commercial sector also consumes, and in some cases, sells renewable natural gas produced at municipal sewage treatment facilities and at waste landfills.

### **Reserve Factors**

To ensure protocol security and upkeep, each digital asset market in Bupa has a reserve factor which determines a small percentage of the rates charged stay within the protocol. These funds can be controlled and used by the governance process for Bupa.

### Liquidations

Liquidations occur when a user executes the liquidation command on the Bupa smart contracts. These events occur when a user is over their collateral factor percentage of either a specific market or in totality. There will be a liquidation penalty imposed when this occurs to the borrower.

### Conclusion

Bupa aims to become a scalable decentralized ECO-ENERGY generation for global market users built on the BEP-20

blockchain. The protocol will be sufficiently decentralized upon the protocol's main network deployment and will be governed by Bupa Tokens (BUPA). Bupa will enable users and developers to build decentralized finance (DeFi) based application on the BEP-20 blockchain for their own use cases. The protocol's scalable nature security trade-off by implementing a novel governor method of delegates to ensure a community based security model.

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